

REMARKS

The specification has been amended to correct clerical errors. The paragraph beginning at 25, line 9 has been amended in order to conform to the description in the following paragraph (beginning at page 25, line 12), for example. The paragraph beginning at page 37, line 21 has been amended to change “basic control modules” to “basic control parameters” as described in the previous paragraph (beginning at page 37, line 9), for example.

Claims 5-7 have been amended to clarify the invention. An embodiment of the invention set forth in Claim 5 is indicated in Figure 3. The “characteristic control module” and the “control device” recited in Claim 5 correspond to the “Second Control Device” and the “First Control Device” indicated in Figure 3 (as explained in the previous section, these legends have been corrected in Figure 3). See also page 13, lines 6-23, for example. The characteristic control module includes a characteristic storage mechanism and a characteristic automatic modification mechanism. Further, the characteristic storage mechanism stores not only basic control parameters but also characteristic data as shown in Figure 2, for example. The basic control parameters and characteristic data are associated with each other as shown in Figure 2, for example. Furthermore, the characteristic automatic modification mechanism (i) evaluates current characteristics of operation based on the input date (see e.g. Characteristic Output Ratio Calculating Unit in Figure 2), (ii) compares the stored characteristic data and the current characteristics (see e.g. Characteristic Recordation Unit and Degree of Suitability of Each Characteristic Data to Each Rule in Figure 2), and (iii) modifying the stored basic control parameters associated with the stored characteristic data based on the comparison of the current characteristics with the stored characteristic date, thereby outputting the control parameters (see e.g. Characteristic Calculation Unit in Figure 2). See also pages 8-12, and Figures 11 and 13, for example.

Support for the amendment to Claim 7 can be found in Figure 12, wherein a user can accept the modified control parameters by pushing a button “Select”.

Claims 17-20 have been amended to clarify the invention. The same amendments as in Claim 5 is made in Claim 17. An embodiment of the invention set forth in Claim 17 is indicated in Figure 20. With regard to the “characteristic generation mechanism”, as shown in Figures 18 and 19 and also explained at page 27, line 16 through page 28, 14, for example, the characteristic generation mechanism generates control parameter candidates, evaluates the basic control

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parameter candidates based on the operational data from the user interface mechanism to select the basic control parameters, determines characteristic data based on the input data, and outputs the basic control parameters associated with the characteristic data to the characteristic storage mechanism.

Claims 29-43 and 50 have been amended to depend ultimately from Claim 5, instead of Claim 24. Claim 58 has been added, which depends from Claim 19. Thus, these claims are readable on the elected invention. The remaining claims have been canceled as being directed to a non-elected invention.

Additionally, the drawings have been amended to correct clerical errors as explained above.

No new matter has been added. Applicant respectfully requests entry of the amendments and reconsideration of the application in view of the amendments and the following remarks.

Claim Objection

Claims 6 and 19 have been objected to as set forth in the Office Action. These claims have been amended to correct the informalities, thereby obviating this objection.

Rejection of Claims 5, 6, and 17 Under 35 U.S.C. § 102

Claim 5-6 and 17 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,864,490 ("Nomoto").

However, in Claims 5 and 17 as amended herein, the basic control parameters and the characteristic data are together stored in the characteristic storage mechanism and processed in the characteristic automatic modification mechanism (see Figure 2, for example). That is, the basic control parameters and the characteristic data are treated as a set (associated with each other), and in the characteristic automatic modification mechanism, as one of them (the characteristic data) is changed, the other (the basic control parameters) is modified. By this configuration, the basic control parameters can effectively and efficiently be modified.

In contrast, Nomoto teaches a typical feedback control wherein based on an error ($r(K)-y(K)=e(K)$), control parameters (K_c , T_i , T_D) are modified. In Nomoto, $r(K)/y(K)$ is not stored together with the control parameters or the fuzzy rules (note that the Examiner considers the fuzzy rules as basic control parameters) in the reasoning rule memory.

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Further, Claim 17 recites the characteristic generation mechanism which generates basic control parameters and characteristic data. Nomoto does not disclose this feature.

Thus, Claims 5, 6, and 17 could not be anticipated by Nomoto. Applicant respectfully requests withdrawal of this rejection.

Rejection of Claims 7 and 18-20 Under 35 U.S.C. § 103

Claims 7 and 18-20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nomoto in view of U.S. Patent No. 5,267,348 (Someya).

However, Someya does not teach the above discussed features. Claims 7 and 18-20 are dependent on Claims 5 or 17 and include all of the limitations of Claims 5 or 17. Thus, a combination of Nomoto and Someya could not render Claims 7 and 18-20 obvious.

Further, Claim 19 recites the characteristic generation mechanism which generates control parameter candidates wherein basic control parameters are selected from the control parameter candidates. Nomoto's elements 8 and 10 do not have the above functions.

Applicant respectfully request withdrawal of this rejection.

Rejection of Claims 22-23 Under 35 U.S.C. § 103

Claims 22 and 23 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nomoto in view of "Official Notice".

However, Claims 22 and 23 depend from Claim 17 which is distinct from the prior art. Thus, a combination of Nomoto and "Official Notice" could not render Claims 22 and 23 obvious. Applicant respectfully request withdrawal of this rejection.

Rejection of Claim 21 Under 35 U.S.C. § 103

Claim 21 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nomoto in view of U.S. Patent No. 4,639,852 (Motomiya).

However, Motomiya does not teach the above discussed features with respect to Claim 17. Claim 21 is dependent on Claim 17 and includes all of the limitations of Claim 17. Thus, a combination of Nomoto and Motomiya could not render Claim 21 obvious.

Applicant respectfully request withdrawal of this rejection.

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The remaining claims

The remaining claims depends ultimately from Claims 5 or 17. "If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious." (M.P.E.P. § 2143.03) Thus, these claims also should not be obvious.

CONCLUSION

In light of the Applicant's amendments to the claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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By: _____



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AMENDMENTS TO THE DRAWINGS

Applicant requests to amend Figures 1, 3, 17, 18, and 20 to correct errors as shown in the attached "Replacement Sheet".

In Figures 1 and 3, the legend "*1 Basic Control Parameter Group, Characteristic Data" has been changed to "*1 Basic Control Parameter-Characteristic Data Group" as indicated in Figure 2, for example, wherein multiple sets of a basic control parameter and characteristic data are used.

Further in Figure 3, the legends "First Control Device" and "Second Control Device" have been changed to "Second Control Device" and "First Control Device" as explained at page 13, lines 10-23, for example.

In Figures 17 and 20, the legend "*2 Basic Control Parameter Group, Characteristic Data" has been changed to "*1 Basic Control Parameter-Characteristic Data Group" as explained above.

Further in Figures 17 and 20, the legend "*1 Basic Control Parameters" has been changed to "*1 Basic Control Parameters, Characteristic Data" as indicated in Figure 18, for example, wherein the characteristic generation mechanism outputs not only basic control parameters but also characteristic data.

In Figure 18, the order of the legends "Evaluation Unit", "Conditions Determining Unit", and "Evolutionary Calculation Unit" has been changed to "Conditions Determining Unit", "Evolutionary Calculation Unit", and "Evaluation Unit" as explained in the paragraph beginning at page 25, line 11, for example.

Further in Figure 18, the legend "control Data" has been changed to "Characteristic Data" as explained in the paragraph beginning at page 25, line 11 (see line 19), for example.

No new matter has been added. Approval of this amendment is respectfully requested.